

Human\_p53 MEEPQSDDPSVEPPPLSQETFSDDLWKLLPPENNV-----LSP--LPSQAMD  
Xeno\_p53 ME-PSSETGMDPPPLSQETFFEDLWSLLP-D-----PQQTVT  
Squid\_p53 MSQGTS-----PNSQETFNLLWDSLEQVTANEYTOIHERGVGYEHEAEPDQTSLEISA  
CPB\_p53 MS-SQSD-----FLPPDVQNFLLAEMEGD-----NMIDNLN  
Trib\_p53A MS-QQS-----QFSDIIPDVDPKFLFDH-----GLKDDV  
Trib\_p53B -----V  
Helio\_p53 -----  
Dros\_p53 MYISQP-----MSWHKESDSEDDSTEVDIK-----EDIPKTV  
consensus m qs et l le i

Human\_p53 DLMLSDDDI--EQWFTEDPGPDEAPRMPEAAAPRV-----APAPAAPTPAAPAPAPSW  
Xeno\_p53 CRCDNLS-----EFPDYPLAADM-----VLOEGLMGNAVPTVT--  
Squid\_p53 YRIAQDPYGRSESYDLLNPIINQIPAPMPIADTONNPLVNHCPYEDMPVSSTPYSPHDH  
CPB\_p53 FFKDEPT-----LNDLNSNILNG-----SIVANDDDSKMVHLIFPG-  
Trib\_p53A GRIMHEN-----NVHLVNDDE-----EEKYSNEANYTESIFPP-  
Trib\_p53B RQYKPPD-----FSHTFHPICISIFQLEDFKFNINQSSYLSAPLIFPP-  
Helio\_p53 -----  
Dros\_p53 EVSGSELT-----TEPMFLQGLNSGN-----LMQFSQQSVLREMMQLQDI  
consensus m p a t v p

Human\_p53 PL--SSSVPSQKTYQGSYGFERLGFLH-SGTAKSVTCTYSPA LNKMF CQLAKTCTPVQLWVD  
Xeno\_p53 ---SCAVPSTDYAGKYGLQDFQ-NGTAKSVTCTYSPA LNKMF CQLAKTCTPVQLVRVE  
Squid\_p53 VQSPQPSVPSNIIKYPGEYVFEEMSAQPSKETKSTTWTYSEKLDKLYVRMATTCPVRFKTA  
CPB\_p53 ---VQTSPVSNDEYDGPYEFEDVHP---TVAKNSWVYSTTLNKVYMTMGSPFPVDFRVS  
Trib\_p53A ---DQPTNLGTEYYPGPENFSVLISP---NEQKSPWEYSEKLNKIFIGINVKFPVAFSVQ  
Trib\_p53B ---SEPLELCNTEYYPGPNFEVFDVDP---NVLKNPWEYSPI LNKIYIDMKHKFPFNFESVK  
Helio\_p53 -----HEMKCNFSVQENWD  
Dros\_p53 QIQANTLPKLEHNHIGGYCFSMVLEDE---PPKSLWMYSIP LNKIYIRMNKAFENVQFK  
consensus q svpsq dy g y f l v k tw ys lknmyv ma fpv f v

FIG. 1A

Human\_p53 STPP-PGTRVRAMATIKQSQHMTETVVRRCPPHHERCSDD-----SDGLAPPQHLLIRVEGNLR  
 Xeno\_p53 SPPP-RGSIIRATAVIKKSEHVAEIVKRCPPHHERSVEP-----GEDAAPPSHLLIRVEGNLQ  
 Squid\_p53 RPPP-SGCQIRAMPPIIMKPEHVQEVVKRCPPNHATAKEH-----NEKHPAPLHIVRCEHKL-  
 CPB\_p53 HRPP-NPILIRSTPVISAPQFAQECVYRCNHEFSHKESS-DGDLKEHIRPHIIRCANQYVA  
 Trib\_p53A NRPQNLPILIRATPVISQTHFQDILVHRCVGRHRPQDQS-NKGVAPHIFQHIIRCTINDNA  
 Trib\_p53B KADERRLEIVRVMPMEEDRYVQELVHRCICHEQLTDPN-NHNVSEMVAQHIIIRCDNNNA  
 Helio\_p53 YQKA-PHMEVVRSTVVEDETQAEKRVERCVQHFHESSTSGIQTEIAKNVLSHSSREIGTQG  
 Dros\_p53 SKMPIQPLNDRVFLCEFSND--VSAPVVVRCQNHLVSVEPLT---ANNAKMRSETERSENPNSS  
 consensus pp lfvRatpvys hvqevv RClnHe d s d i hiircennna

Human\_p53 VEYLDDDRNT---FRHSVVVPYEP---PEVGSDDCTIHHYNYMNCNSSSCMG-GMNRRRPILTII  
 Xeno\_p53 AYYMEDVNS---GRHSVCVPYEG---PQVGTCTTVLYNYMNCNSSSCMG-GMNRRRPILTII  
 Squid\_p53 AKYHEDKYS---GRQSVETIPHEM---PQAGSEWVVNLYQFMCLGSCVG-GPNRRRPIQEV  
 CPB\_p53 AVLGDKSKN---ERLSVVIPIFGI---PQGTESVREITEFVCKNSCPSPGMNRRAVETII  
 Trib\_p53A LYFGDKNTG---TRLNTEVPLAH---PQVGEDVVKEFEQFVCKNSCPL-GMNRRRPIDVV  
 Trib\_p53B QYFGDKNAG---KRLS-----  
 Helio\_p53 VYCGKQVDM---ADSWYSVLVEF---MRTSSESCSHAYQFSCKNSCAT-GENRRRAIATII  
 Dros\_p53 VYCGNAQKGKISERFSVVVPLNMSRSVTRSCGLTRQTLAKFKFVCONSCIG---RKETSLEV  
 consensus vyygdk r svvvp e pq gse t ynfmc nscmg gmnrrpi li

FIG.\_1B

Human\_p53 ITLEDSSGNTLEGRNSFEVRVCACPGRDRRTTEE-NLRKKG---EPHHELPPGSTKRALP  
 Xeno\_p53 ITLETPQGLLEGRRCFEVRVCACPGRDRRTTEED-NYTKK---RGLKPSG--KRELA  
 Squid\_p53 FTLEK-DNQVLEGRRAVEVRVCACPGRDRKADKASLVSK---PPSPKKNFGPQRSLV  
 CPB\_p53 FTLEDNQGTIYGRKTENVRVICSCKPRDKKDKDKDNTANT---NLPHG-KKKKME  
 Trib\_p53A FTLEDNKGEVFGRRLVGVRVCSCKPRDKDKDKDME---VPRRKKRKL  
 Trib\_p53B FTLEDAMGNTIHGRQKVGAR---  
 Helio\_p53 FCLEKACGDIIVGQHVIVHVKICTCPKRDRIQDERQLNSKKRKSVPEAAEEDPSKVRRCJA  
 Dros\_p53 ftled g ligr v vivc cp rdr eek k p g kr l  
 consensus

Human\_p53 NNTSSSP-QPKK---KPLDGEYFTTQIRGREREMFREMNEALDELKDAQAG---  
 Xeno\_p53 HPPSSEPLPKKRLVVDDEEIEFTIRIKGRSRYEMIKKINDALELQESLDQO---  
 Squid\_p53 LTNDITKITPKK---RKIDDECFTEKVRGRENYELCKKIDIMELAARIPEAERLLYKQE  
 CPB\_p53 KPSKKPMQTQAE---NDTKETTLTIPLEVGRHNEQNVLYKCHDMMAGEIILRN---  
 Trib\_p53A NDERRVVPQGSS---DNKIFALNTHIPGKKNYLOALKKMCQDMLANEILKKQ---  
 Trib\_p53B  
 Helio\_p53  
 Dros\_p53 IKTEDTESNDSRDCCDSAAEWNVSRTPDGDYRLAITCPNKKEWTLQSIEMIK---  
 consensus k e tl i gr f m kl e l d l

Human\_p53 -KEPGG---SRAHSSHLKSKKGQ-----STSRHKKLMFKTEGPDSD---  
 Xeno\_p53 -KVTIK---CRKCRDEIKPKKG-----KKLLVKDEQPDSE---  
 Squid\_p53 RQAPIGRITSLPSSSSNGSQDGSRSSTAFSTDSSQVNSSQNTQMVNGQVPHEETPVT  
 CPB\_p53 ---IG---NGTEGPKIALN-----KINTLIRESE---  
 Trib\_p53A ---EQG---GD-DSADKNCYN-----EITVLLNGTAAFD---  
 Trib\_p53B  
 Helio\_p53  
 Dros\_p53 --EAAAEEVLRPNQENLRHRAN-----KLSEKKRAYELP---  
 consensus g k lmv d

FIG.\_1C

```
Human_p53  -----  
Xeno_p53   -----  
Squid_p53  KCEPTIAQWLTKLGLQAYIDNFFQQKGLHNMWFQLDDEFTLEDLQSMRIGTGHRNKIWKS  
CPB_p53    -----  
Trib_p53A  -----  
Trib_p53B  -----  
Helio_p53  -----  
Dros_p53   -----  
consensus -----
```

```
Human_p53  -----  
Xeno_p53   -----  
Squid_p53  LLDYRRLSSGTESQALQHAASNASTLSVGSQNSYCPGFYEVTTRYKHTISYL  
CPB_p53    -----  
Trib_p53A  -----  
Trib_p53B  -----  
Helio_p53  -----  
Dros_p53   -----  
consensus -----
```

FIG. 1D